Amendments to the Claims

Claims 1-17 (canceled)

Claim 18 (Currently amended). A method for routing of data packets, comprising the steps:

(a) extracting a destination address identifier from a data packet to be forwarded,

(b) compressing the destination address identifier using a compression algorithm,

(c) comparing the compressed destination address identifier with forwarding addresses available for routing, which forwarding addresses have been compressed using the compression algorithm and stored as entries of a routing table, ~~and~~

(d) if a positive comparison between the compressed destination address identifier and an entry stored in the routing table is found in step (c), then switching the data packet to an output link associated with the forwarding address corresponding to the entry, and

wherein each entry of the routing table comprises a compressed forwarding address and an output link number, and that, if a positive comparison between the compressed destination address identifier and a compressed forwarding address in an entry stored in the routing table is found, the data packet is switched to an output link associated with the output link number in the entry.

Claim 19 (Cancelled).

Claim 20 (Previously presented). The method according to claim 18, wherein the compression algorithm comprises a lossless data compression algorithm.

Claim 21 (Previously presented). The method according to claim 20, wherein the lossless data compression algorithm is selected from a group comprising Huffman algorithms, Arithmetic algorithms, and Lempel-Ziv algorithms.

Claim 22 (Previously presented). The method according to claim 18, further comprising adjusting at least one parameter of the data compression algorithm in dependence upon data characteristics of the destination address identifier.

Claim 23 (Previously presented). The method according to claim 18, wherein step (c) further comprises comparing the compressed destination address identifier with entries of the routing table taking into account a similarity between the compressed destination address identifier and a compressed destination address identifier of a preceding data packet.

Claim 24 (Previously presented). The method according to claim 18, wherein step b) further comprises compressing the destination address identifier using a code table that associates a code word to a symbol of the destination address identifier and to a symbol of each forwarding address, respectively.

Claim 25 (Previously presented). The method according to claim 24, wherein each symbol of the destination address identifier and each symbol of a forwarding address, respectively, comprises a plurality of bits of the destination address identifier and a plurality of bits of the forwarding address, respectively.

Claim 26 (Previously presented). The method according to claim 25, wherein each symbol of the destination address identifier and each symbol of the forwarding addresses comprises four successive bits of the destination address identifier and the forwarding address, respectively.

Claim 27 (Previously presented). The method according to claim 24, wherein step b) further comprises compressing the destination address identifier using the code table that associates the code word to the symbol of the destination address identifier, the length of each code word being inversely related to an appearance probability of a corresponding symbol in the code table.

Claim 28 (Previously presented). The method according to claim 24, wherein step b) further comprises compressing the destination address identifier using the code table that associates the code word to the symbol of the destination address identifier, the length of each code word being inversely related to an appearance probability of a corresponding symbol in the destination address identifier of an input data packet.

Claim 29 (Previously presented). The method according to claim 18, wherein step (a) further comprises extracting the destination address identifier from an IPv6 data packet to be forwarded.

Claim 30 (Currently amended). A routing apparatus for routing of data packets, comprising:

a first data compressor configured to receive a destination address identifier of a data packet to be forwarded and to generate a compressed destination address identifier therefrom,

a routing table store configured to store a plurality of forwarding addresses available for routing, each forwarding address having been compressed according to a compression algorithm as used in the first data compressor and having been stored as an entry of the routing table store,

a routing unit configured to compare the compressed destination address identifier with the compressed forwarding addresses stored in the routing table store so as to find a correspondence between the compressed destination address identifier and one of the entries of the routing table store, ~~and~~

a switch configured to switch the data packet to an output link associated with a forwarding address corresponding to the entry for which a correspondence has been found with the compressed destination address identifier, and

wherein each entry of the routing table comprises a compressed forwarding address and an output link number, and that, if a positive comparison between the compressed destination address identifier and a compressed forwarding address in an entry stored in the routing table is found, the data packet is switched to an output link associated with the output link number in the entry.

Claim 31 (Previously presented). The routing apparatus according to claim 30, further comprising a second data compressor configured to compress the forwarding addresses according to said data compression algorithm.

Claim 32 (Previously presented). The routing apparatus according to claim 30, wherein the first data compressor is configured to use a lossless data compression algorithm.

Claim 33 (Previously presented). The routing apparatus according to claim 32, wherein the first data compressor is configured to use a data compression algorithm being selected from a group comprising Huffman algorithms, Arithmetic algorithms, and Lempel-Ziv algorithms.

Claim 34 (Previously presented). The routing apparatus according to claim 30, further comprising a compression parameter adjuster configured to adjust at least one parameter of the first data compressor in dependence upon data characteristics of the destination address identifier.

Claim 35 (Previously presented). The routing apparatus according to claim ~~12~~30, wherein the routing unit is operably connected to provide feedback information to the first data compressor.

Claim 36 (Currently amended). A routing apparatus for routing of data packets, comprising:

extraction means for extracting a destination address identifier from a data packet to be forwarded,

routing table storing means for storing a plurality of forwarding addresses available for routing, each of the plurality of forwarding addresses having been compressed according to a data compression algorithm and having been stored as an entry of the routing table_storing means,

a routing unit for comparing the destination address identifier with the entries stored in the routing table storing means for finding a correspondence between the destination address identifier and one of the forwarding addresses, and

switch means for switching the data packet to an output link associated with the respective forwarding address matching the destination address identifier,

wherein first data compression means are provided for compressing the destination address identifier extracted by the extraction means according to ~~a~~ said data compression algorithm, ~~and~~

wherein second data compression means are provided for compressing the forwarding addresses according to said data compression algorithm and storing the compressed forwarding addresses as entries in the routing table storing means, the routing unit being configured such that it compares the compressed destination address identifier with the compressed forwarding addresses stored in the routing table storing means, and

wherein each entry of the routing table comprises a compressed forwarding address and an output link number, and that, if a positive comparison between the compressed destination address identifier and a compressed forwarding address in an entry stored in the routing table is found, the data packet is switched to an output link associated with the output link number in the entry.

Claim 37 (Previously presented). The routing apparatus according to claim 36, wherein the first and second data compression means are configured such that they use a lossless data compression algorithm.